

## **APPENDIX 7-8**

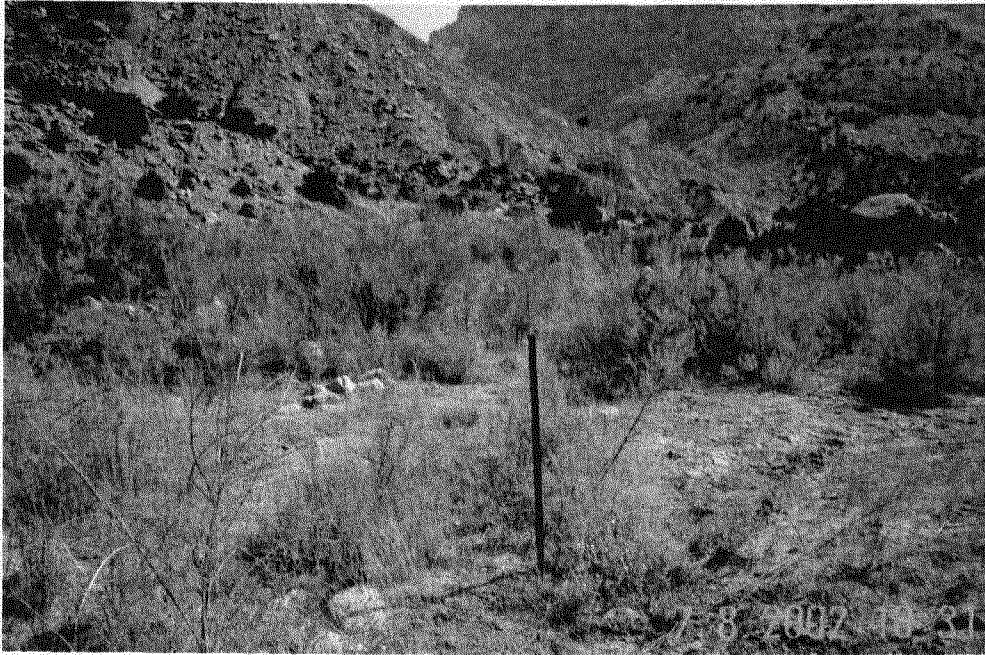
# **Water Monitoring Location Descriptions**

Last updated November 2006

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**L-1-S**

**Location:** In Lila Canyon wash North of the permit area. Stream reach is intermittent by definition but ephemeral acting (See Appendix 7-7 & Plate 7-4). The wash above and below flows only as a result of spring run-off or storm events. Located in the Mancos Shale at an elevation of 5,830 feet.

**General:** The Sunnyside coal seam does not exist at this location. Since L-1-S is located off the permit area and subsidence is not a possibility, there is no potential for Lila Canyon Mine to negatively affect this monitoring location. The permittee has never observed amphibians at or near this location.

**Vegetation description:** Habitat within this Mancos substrate out wash area is predominately a mix of salt desert shrub, greasewood, and invasive tamarisk and cheatgrass.



**L-2-S**

- Location:** L-2-S is located In the Right Fork of Lila Canyon wash South of and upstream of the permit area. Stream reach is ephemeral by definition (See Appendix 7-7& Plate 7-4). The wash above and below flows only as a result of spring run-off or storm events. Located in the Mancos Shale at an elevation of 5,950 feet.
- General:** The Sunnyside coal seam does not exist at this location. Since L-2-S is located off the permit area and subsidence is not a possibility, there is no potential for Lila Canyon Mine to negatively affect this monitoring location. The permittee has never observed amphibians at or near this location.
- Vegetation description:** Habitat overstory adjacent to the dry streambed monitoring location is Pinyon-Juniper, isolated sagebrush, and needle and thread grass.

**L-3-S**

**Location:** Located in the Right Fork of Lila Canyon wash South of and down stream of the permit area. Stream reach is ephemeral by definition (See Appendix 7-7& Plate 7-4). The wash above and below flows only as a result of spring run-off or storm events. The Sunnyside coal seam does not exist in this location. Located in the Mancos Shale at an elevation of 5,750 feet.

**General:** Since L-3-S is located off the permit area and subsidence is not a possibility, there is no potential for the Lila Canyon Mine to negatively affect this monitoring location. The permittee has never observed amphibians at or near this location.

**Vegetation description:** Habitat overstory is a Pinyon-Juniper habitat similar to L-2-S.

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**L-4-S****Lila Sediment Pond Discharge**

(UPDES 001A permit #UTG040024)

L-4-S will be installed once the Lila Canyon facilities are built. This monitoring location is the sediment pond discharge from the sediment pond to be constructed at the Lila Canyon Mine surface facilities. The projected location of the monitoring point is shown on Plate 7-4.

The monitoring location is UPDES (Utah Pollutant Discharge Elimination System) point # 001A under general permit number UTG040000.

**PHOTO NOT YET AVAILABLE**

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**L-5-G****Underground Mine Water Discharge**

(UPDES 002A permit #UTG040024)

This monitoring location will be installed once the mine has been constructed. This monitoring location is to monitor the underground mine water discharge and is shown on Plate 7-4. It is unlikely that any significant amounts of water will be discharged from underground workings. However, in the unlikely event that water is discharged it will be discharged from UPDES (Utah Pollutant Discharge Elimination System) point #002A under general permit number UTG040000.

The monitoring location is UPDES (Utah Pollutant Discharge Elimination System) point # 002A under general permit number UTG040000.

**PHOTO NOT YET AVAILABLE**

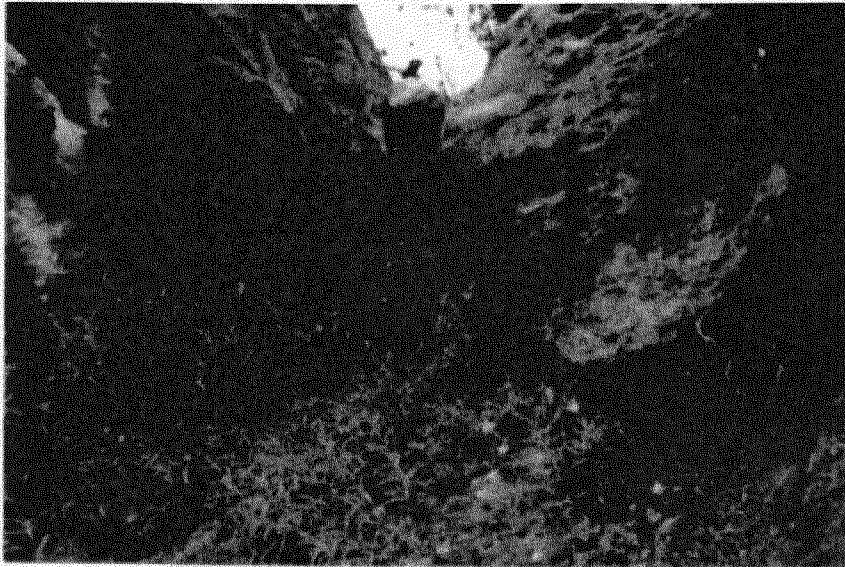
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**L-6-G**  
**(H-18) Lila Canyon**



**Location:** Located in Lila Canyon within the Permit area. The old Horse Canyon Mine has already undermined this monitoring location with no impact. Stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). The wash above and below the spring flows only as a result of spring run-off or storm events. Located in the Upper Price River near the contact of the Flagstaff/ North Horn and the Upper Price River Formations at an elevation of 7280 feet.

**General:** The coal seam has been previously mined under this location. The spring lies approximately 1,800 feet above the mined out Sunnyside coal seam. There is no potential for Lila Canyon Mine to negatively impact this monitoring location. The permittee has never observed amphibians at or near this location.

**Vegetation description:** Habitat overstory is Douglas Fir-Mountain Brush association.

Since the operator has never observed flow at this location, and a new location upstream has been determined to be more suitable for monitoring, this site will be terminated. L-11-G has been established to replace L-6-G as a monitoring location.

**L-7-G**  
**Cottonwood Spring**



**Location:** Located in Cottonwood Canyon approximately .5 miles from the intersection of Cottonwood Canyon with Little Park Wash. This spring is located approximately .25 miles inside the permit area. Located in the Flagstaff/ North Horn Formation at an elevation of 7360 feet. Stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). Flow from the spring flows approximately 200 feet down stream where it evaporates or is absorbed. The drainage above and below Cottonwood spring flows only as a result of spring run-off or storm events.

**General:** The coal seam at this location lies approximately 2,500 feet below the spring. Due to the depth of the coal and the tendency for the overlying formations to swell and seal, there is little potential for Lila Canyon Mine to negatively impact this spring or recharge sources. The permittee has never observed amphibians at or near this location.

**Vegetation description:** Habitat overstory is Douglas fir-mountain brush association.



**L-8-G**  
**Above IPA #1**

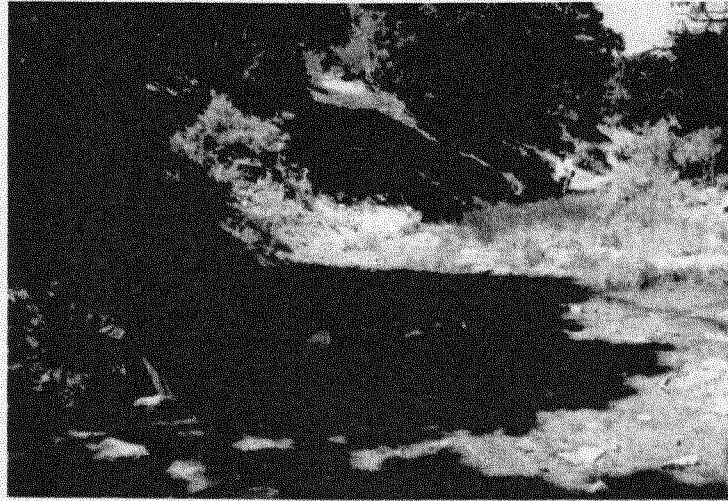


**Location:** L-8-G is located in an unnamed canyon that the operator refers to as IPA #1, approximately 1 mile above Piezometer IPA #1. Located in the Flagstaff/ North Horn Formation at an elevation of 7360 feet. Stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). Flow from the spring flows approximately 200 feet down stream where it evaporates or is absorbed. The drainage above and below this spring flows only as a result of spring run-off or storm events.

**General:** The coal seam at this location lies approximately 2,400 feet below the spring. The spring is located .5 miles to the East and off of, the permit area. Due to its location, .5 miles outside of the limit of subsidence, depth of the coal, and the tendency for the overlying formations to swell and seal, there is no potential for Lila Canyon Mine to negatively impact this spring or recharge sources. The permittee has never observed amphibians at or near this location.

**Vegetation description:** Habitat is predominantly Pinyon - Juniper and sagebrush grass associations.

**L-9-G**  
**Pine Spring**



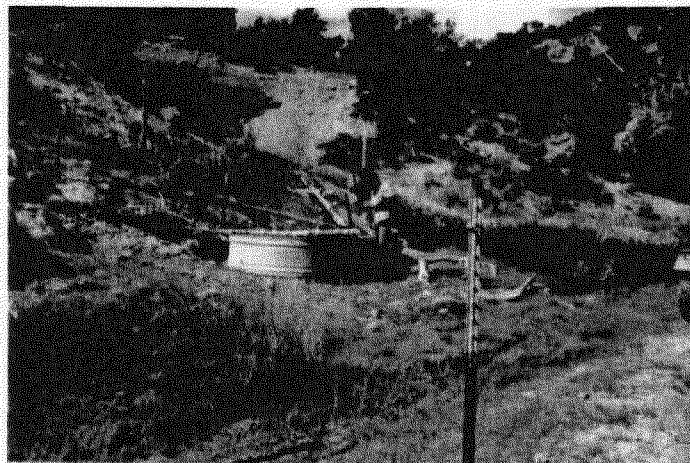
**Location:** L-9-G is located in an unnamed side canyon approximately 1.25 miles from Little Park Wash. Located in the Flagstaff/ North Horn Formation at an elevation of 7200 feet. Stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). Flow from the spring flows approximately 400 feet down stream where it evaporates or is absorbed. The drainage above and below this spring flows only as a result of spring run-off or storm events.

**General:** The coal seam at this location lies approximately 2,300 feet below the spring. The spring is located along the channel and just inside of the permit area. Due to its location, thickness of the overburden, and the tendency for the overlying formations to swell and seal, there is no potential for Lila Canyon Mine to negatively impact this spring or recharge sources. The permittee has never observed amphibians at or near this location.

**Vegetation description:** A wet meadow habitat is present within the area of the monitoring site. An overstory of Pinyon-Juniper and sagebrush grass lies immediately adjacent along each side of this site. The wet meadow habitat was washed out or covered with sand and gravel as a result of storm events in Aug 2003. Indications of localized riparian habitat exists. Moss, sedge, willow, columbine observed.



**L-10-G**  
**Williams Draw Spring**



**Location:** L-10-G is located in Williams Draw approximately 1.25 miles South and East of the permit area. Located in the Upper Price River near the contact of the Flagstaff/ North Horn and the Upper Price River Formations at an elevation of 6720 feet. Stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). Flow from the spring flows approximately 200 feet down stream where it evaporates or is absorbed. The drainage above and below this spring flows only as a result of spring run-off or storm events.

**General:** The coal seam at this location lies approximately 1250 feet below the spring. The spring is located over a mile outside of the limit of subsidence. Due to its location, outside the limit of subsidence, depth of the coal, and the tendency for the overlying formations to swell and seal, there is no potential for Lila Canyon Mine to negatively impact this spring or recharge sources. The permittee has never observed amphibians at or near this location.

**Vegetation description:** A wet meadow habitat is present within the area of the monitoring site. An overstory of Pinyon-Juniper and sagebrush grass lies immediately adjacent along each side of this site.

Since this spring location is so far off the permit area a better site was identified where the information gathered would be more valuable. This site will be replaced by L-12-G.

**L-11-G**  
**Mont/Leslie Springs Area**  
**Will Replace L-6-G**



**Location:** L-11-G is located in Lila Canyon within the Permit area. Located in the Upper Price River near the contact of the Flagstaff/ North Horn and the Upper Price River Formations at an elevation of 7360 feet. The old Horse Canyon Mine has already undermined this monitoring location with no impact. The spring flows for approximately 50 feet where it either evaporates or is absorbed. Stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). The wash flows only as a result of spring run-off or storm events.

**General:** The coal seam has been previously mined at this location. The spring lies approximately 1,900 feet above the mined out Sunnyside coal seam: There is no potential for Lila Canyon Mine to negatively impact this monitoring location. The permittee has never observed amphibians at or near this location.

**Vegetation description:** Habitat overstory is Douglas fir-mountain brush association.

This monitoring location will replace L-6-G.



**L-12-G**  
**Will Replace L-10-G**



**Location:** L-12-G is located in an unnamed drainage on the south end of the permit area. Located in the Upper Price River at an elevation of 6800 feet. Stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). Flow from the spring flows approximately 100 feet down stream where it evaporates or is absorbed. The drainage above and below this spring flows only as a result of spring run-off or storm events.

**General:** The coal seam at this location lies approximately 1100 feet below the spring. The spring is located just outside of the limit of subsidence. Due to its location, outside the limit of subsidence, depth of the coal, and the tendency for the overlying formations to swell and seal, there is no potential for Lila Canyon Mine to negatively impact this spring or recharge sources. The permittee has never observed amphibians at or near this location.

**Vegetation description:** A small wet meadow habitat is present within the area of the monitoring site. An overstory of Pinyon-Juniper and sagebrush grass lies immediately adjacent along each side of this site.

**L-13-S**  
**Little Park Wash**



**Location:** L-13-S is located in Little Park Wash at the road intersection. Located in Alluvium adjacent to the Upper Price River Formation at an elevation of 6840 feet. Stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). The drainage above and below this monitoring location flows only as a result of spring run-off or storm events.

**General:** The coal seam at this location lies approximately 1400 feet below the monitoring location. Due to its location, depth of the coal, and the tendency for the overlying formations to swell and seal, there is no potential for Lila Canyon Mine to negatively impact this monitoring location. The permittee has never observed amphibians at or near this location.

**Vegetation description:** The area surrounding the dry wash monitoring site consists primarily of mature sagebrush habitat.

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**L-14-S**  
**Wash Below L-12-G**



**Location:** L-14-S is located at the road intersection of the unnamed drainage below L-12-G. Located in the Upper Price River Formation at an elevation of 6690 feet. Stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). The drainage above and below this monitoring location flows only as a result of spring run-off or storm events.

**General:** The coal seam at this location lies approximately 1000 feet below the monitoring location. Due to the faulting this monitoring location is outside the mine projections and the projected limit of subsidence. As a result of its location, depth of the coal, and the tendency for the overlying formations to swell and seal, there is no potential for Lila Canyon Mine to negatively impact this monitoring location. The permittee has never observed amphibians at or near this location.

**Vegetation description:** The area surrounding the dry wash monitoring site consists primarily of mature sagebrush habitat with a bordering overstory of Pinyon-Juniper and invasive tamarisk..

**L-15-S**  
**Williams Draw Wash**



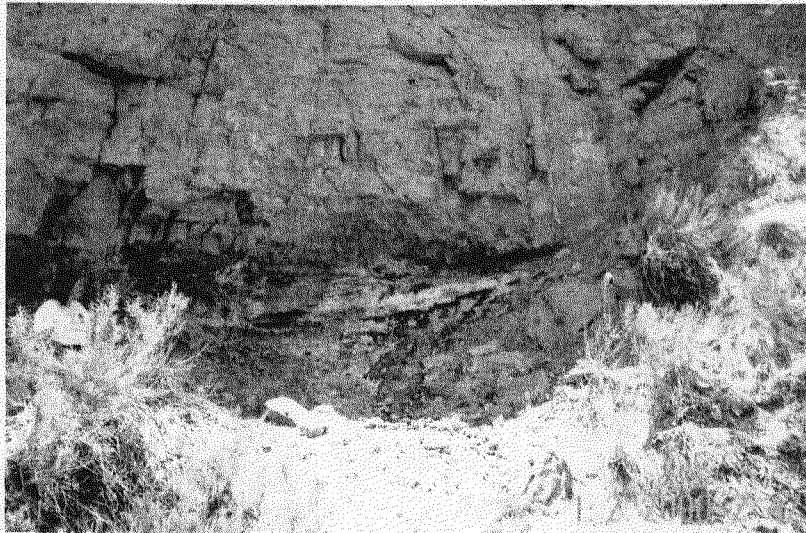
**Location:** L-15-S is located at the road intersection of Williams Draw. Located in Alluvium adjacent to the Upper Price River Formation at an elevation of 6560 feet. The stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). The drainage above and below this monitoring location flows only as a result of spring run-off or storm events.

**General:** The coal seam at this location lies approximately 900 feet below the monitoring location. This site is located 1.25 miles South of the permit boundary. As a result of its location, there is no potential for Lila Canyon Mine to negatively impact this monitoring location. The permittee has never observed amphibians at or near this location.

**Vegetation description:** The area surrounding the dry wash monitoring site consists primarily of mature sagebrush and Pinyon-Juniper habitat.



### **L-16-G Little Stink**



**Location:** Located in what has recently been named Stinky Spring Canyon by the Operator. The seep is located approximately 0.25 miles to the West of the permit area and within the Central Graben. The seep is located at the top of the Mancos Shale approximately 600 feet below the coal seam in a highly faulted area at an elevation of 5840 feet. The stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). The drainage above and below this monitoring location flows only as a result of spring run-off or storm events.

**General:** Due to its location, outside the permit area, outside the limit of subsidence, within the Central Graben, and being 600 feet below the coal seam, there is no potential for Lila Canyon Mine to negatively impact this spring or recharge sources. This location is used by Rocky Mountain Bighorn Sheep; however, no evidence of the sheep using the poor quality water has been documented. The permittee has never observed amphibians at or near this location.

**Vegetation description:** Habitat immediately below this wet seep monitoring site is a mix of grasses and salt desert shrub habitat.

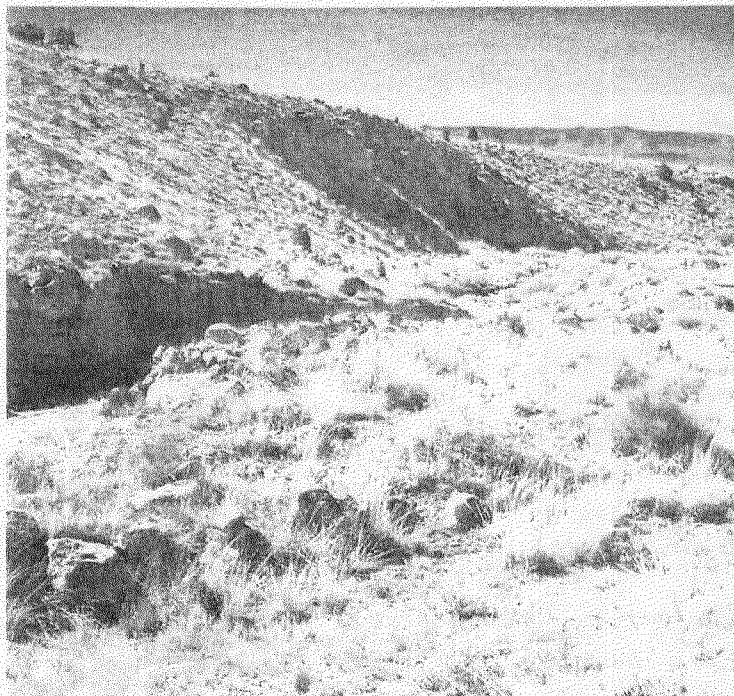
### **L-17-G Big Stink**



- Location:** Located in what has recently been named Stinky Spring Canyon. The seep is located approximately 0.25 miles to the West of the permit area, 0.1 mile above L-16-S, and within the Central Graben. The seep is located at the top of the Mancos Shale approximately 500 feet below the coal seam in a highly faulted area at an elevation of 5920 feet. The stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). The drainage above and below this monitoring location flows only as a result of spring run-off or storm events.
- General:** Due to its location, outside the permit area, outside the limit of subsidence, and being 500 feet below the coal seam, there is no potential for Lila Canyon Mine to negatively impact this stream reach. This location is used by Rocky Mountain Bighorn Sheep; however, no evidence of the sheep drinking the poor quality water has been documented. The permittee has never observed amphibians at or near this location.
- Vegetation description:** Habitat immediately below this wet seep monitoring site is a mix of grasses and salt desert shrub habitat and invasive tamarisk.



### L-18-S Stinky Spring Wash



- Location:** Loca ted in what has recently been named Stinky Spring Canyon. The stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). The drainage above and below this monitoring location flows only as a result of spring run-off or storm events.
- General:** Due to its location, outside the permit area, outside the limit of subsidence, and being 500 feet below the coal seam, there is no potential for Lila Canyon Mine to negatively impact this spring or recharge sources. This location is used by Rocky Mountain Bighorn Sheep; however, no evidence of the sheep drinking the poor quality water has been documented. The permittee has never observed amphibians at or near this location.
- Vegetation description:** The area surrounding the dry wash monitoring site consists primarily of mature sagebrush and Pinyon-Juniper habitat.

### L-19-S Little Park Wash

**Location**

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L-19-S is located in Little Park Wash at the permit boundary. The flow at this site is nearly the same as for L-13-S. There are no contributing sources between the two sites other than overland flow. Essentially, the data already recorded for site L-13-S is representative of the new site. Located in Alluvium adjacent to the Upper Price River Formation at an elevation of 6725 feet. Stream reach is intermittent by definition but is ephemeral acting (See Appendix 7-7 & Plate 7-4). The drainage above and below this monitoring location flows only as a result of spring run-off or storm events.

**General:**

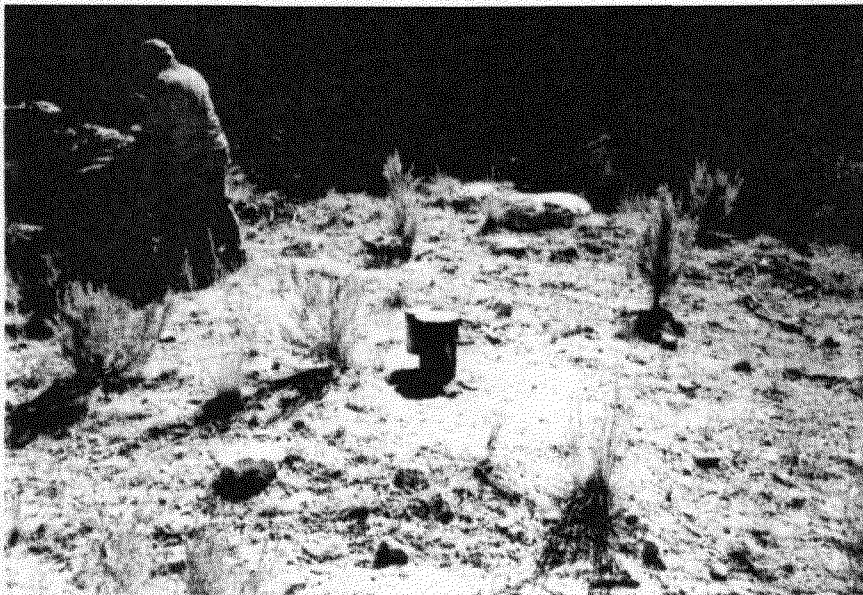
The coal seam at this location lies approximately 1400 feet below the monitoring location. Due to its location outside of the subsidence area, depth of the coal, and the tendency for the overlying formations to swell and seal, there is no potential for Lila Canyon Mine to negatively impact this monitoring location. The permittee has never observed amphibians at or near this location.

**Vegetation description:**

The area surrounding the dry wash monitoring site consists primarily of mature sagebrush habitat.



**IPA #1  
Piezometer**

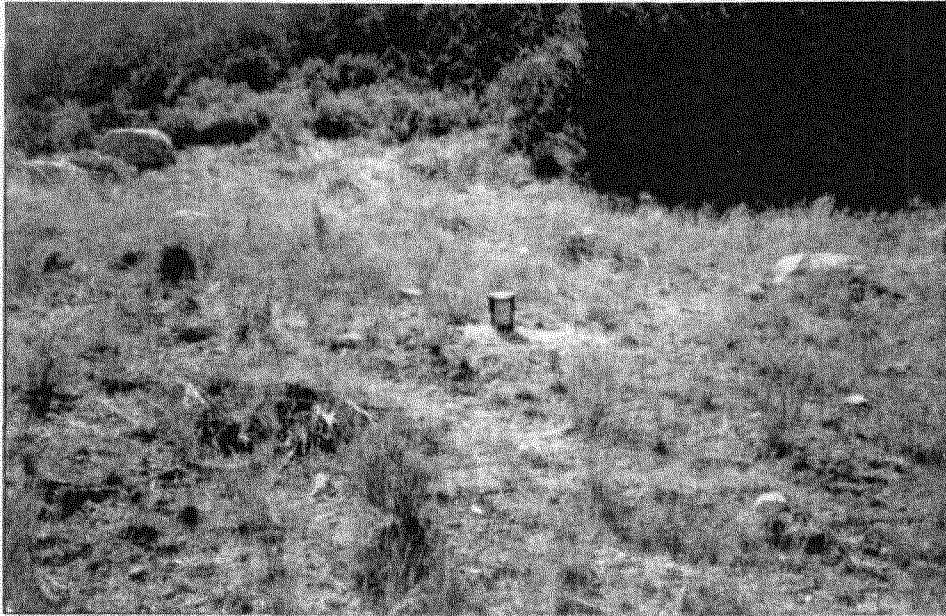


**Location:** Located in an unnamed canyon that is a branch of Little Park Wash. Located in the Upper Price River Formation at an elevation of 7034 feet. See Plate 7-4 for location.

**General:** This site is used as a Piezometer measuring location only. The depth of water is measured quarterly.

**Vegetation description:** Habitat surrounding this Piezometer site is sagebrush-grass.

**IPA #2  
Piezometer**



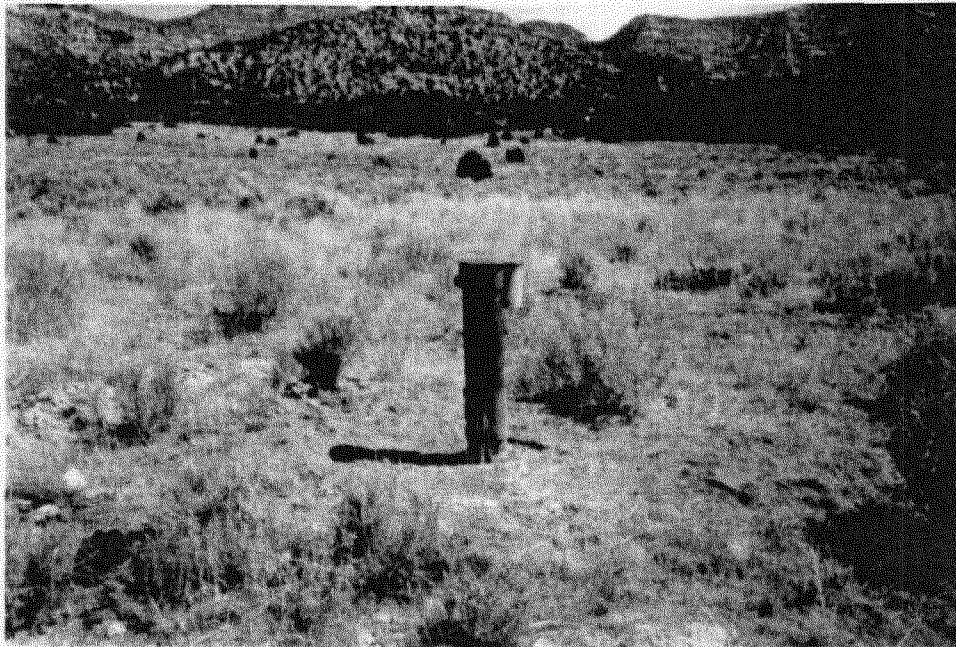
**Location:** Located on the Little Park Wash road near the Little Park Wash crossing. See Plate 7-4 for location. Located in the Upper Price River Formation at an elevation of 6865 feet.

**General:** This site is used as a Piezometer measuring location only. The depth of water is measured quarterly.

**Vegetation description:** Habitat surrounding this Piezometer site is sagebrush-grass.



**IPA #3  
Piezometer**



**Location:** Located on the Little Park Wash road. See Plate 7-4 for location. Located in the Upper Price River Formation at an elevation of 6810 feet.

**General:** This site is used as a Piezometer measuring location only. The depth of water is measured quarterly.

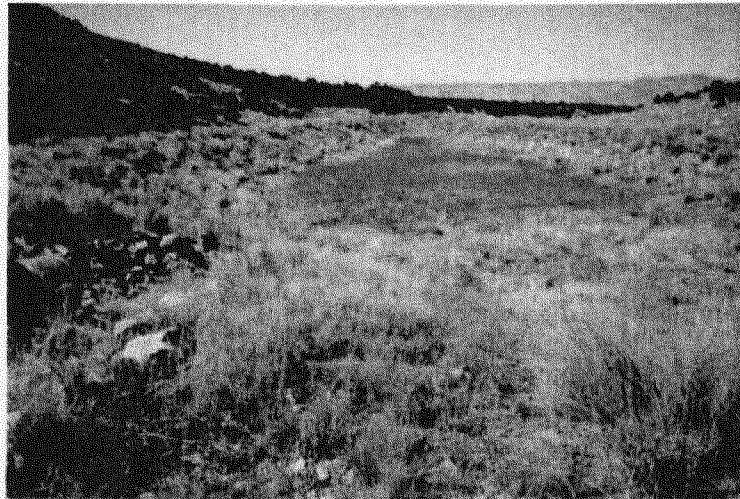
**Vegetation description:** Habitat surrounding this Piezometer site is sagebrush-grass.

**Horse Canyon  
Sediment Pond #1**

**Sediment Pond has been Reclaimed  
Monitoring no longer necessary**



**Horse Canyon  
Sediment Pond #2  
UPDES #002A**



**Location:** Located in Horse Canyon above and to the North of the bridge on County highway 124. Located in an alluvial fan on the Mancos Shale at an elevation of 6190 feet.

**General:** This is UPDES site #002A of the Horse Canyon UPDES permit. The Sunnyside coal seam does not exist in this location. There is no potential for Lila Canyon Mine to negatively affect this monitoring site. The permittee has never observed amphibians at or near this location.

**Vegetation description:** This reseeded sediment pond is covered by a reclamation vegetation cover consistent with a sagebrush-grass habitat.

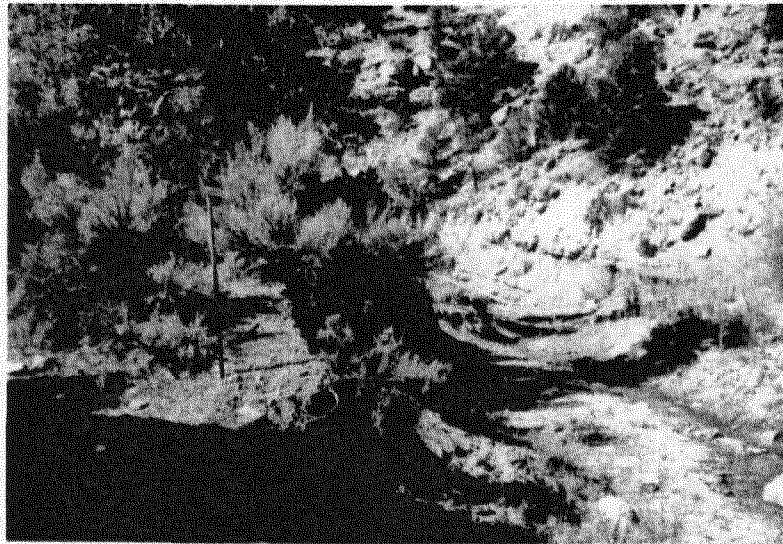
**HC-2 (B-1)**  
**Horse Canyon Below Permit Area**



- Location:** HC-2 is located in Horse Canyon Wash West and downstream of the permit area. Located in an alluvial fan on the Mancos Shale at an elevation of approximately 6100 feet. Stream reach is ephemeral by definition (See Appendix 7-7& Plate 7-4). The wash above and below flows only as a result of spring run-off or storm events.
- General:** The Sunnyside coal seam does not exist in this location. Since this site is located off the permit area and subsidence is not a possibility, there is no potential for Lila Canyon Mine to negatively affect this monitoring location. The permittee has never observed amphibians at or near this location.
- Vegetation description:** This dry channel monitoring location is surrounded by a Pinyon-Juniper overstory. Vegetation within the ephemeral acting channel is a mix of sagebrush, salt desert shrub and invasive tamarisk habitats.



**HC-1**  
**Horse Canyon Above Permit Area**



**Location:** HC-1 is located in Horse Canyon Wash within the permit area, near the Carbon Emery county lines. Located in the Upper Price River Formation at an elevation of 6480 feet. Flow appears to be perennial due to spring inflow in the immediate area. Stream reach below this monitoring point is intermittent by definition but exhibits ephemeral flow patterns. The wash above and below flows only as a result of spring run-off or storm events.

**General:** The coal seam has been previously mined at this location. The monitoring location lies approximately 300 feet above the mined out Sunnyside coal seam. There is no potential for Lila Canyon Mine to negatively impact this monitoring location. The permittee has never observed amphibians at or near this location.

**Vegetation description:** This wet channel monitoring location is surrounded by mature sagebrush and Pinyon-Juniper habitats. Invasive tamarisk is present within the channel.

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**RF-1**  
**Right Fork**



**Location:** RF-1 is located in the right fork of Horse Canyon Wash near the road forks but within the permit area. Located in the Upper Price River Formation at an elevation of 6480 feet. Flow appears to be perennial due to Redden Spring inflow. Flow continues for approximately 300 feet below the monitoring location where the stream reach becomes ephemeral. The wash 700 feet below flows only as a result of spring run-off or storm events.

**General:** The coal seam has been previously mined at this location. The monitoring location lies approximately 300 feet above the mined out Sunnyside coal seam. There is no potential for Lila Canyon Mine to negatively impact this monitoring location. The permittee has never observed amphibians at or near this location.

**Vegetation description:** This wet channel monitoring location is surrounded by mature sagebrush and Pinyon-Juniper habitats. Invasive tamarisk is present within the channel.

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**RS-2**  
**Redden Spring**



**Location:** Redden Spring is located in the right fork of Horse Canyon Wash near the road forks but within the permit area. Located at the base of the Flagstaff/North Horn Formation at an elevation of 6592 feet. The wash above flows only as a result of spring run-off or storm events.

**General:** The coal seam has been previously mined at this location. The monitoring location lies approximately 800 feet above the mined out Sunnyside coal seam. There is no potential for Lila Canyon Mine to negatively impact this monitoring location. The permittee has never observed amphibians at or near this location.

**Vegetation description:** Habitat immediately below this wet seep monitoring site is a mix of grasses and salt desert shrub habitat.

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